

Claims

1. A sensor array comprising: a substantially constant resolution portion comprising a first series of first concentric closed rings, each first closed ring comprising a monodimensional array of equally spaced sensor element location sites, each location site including at least one sensor element; and a spatially variant portion comprising a second series of second concentric closed rings, the second series being concentric with the first series and each second closed ring comprising a monodimensional array of equally spaced sensor element location sites, each location having at least one sensor element, the spatially variant portion surrounding or being surrounded by the substantially constant resolution portion, and the density of sensor element location sites continuously increasing or decreasing between the substantially constant resolution portion and the spatially variant portion.
2. The sensor array according to claim 1, wherein the number of sensor element location sites in each first closed ring is defined by the i^{th} closed ring having n sensor element location sites and the $i + 1^{\text{th}}$ closed ring having $n + m$ sensor element location sites where n is not equal to 1.
3. The sensor array according to claim 1 or 2, wherein the aspect ratio of any sensor element location site with reference to its neighbors is between 2.1 and 0.6.
4. The sensor array according to any previous claim, wherein the closed rings are circles or ellipses.
5. The sensor array according to ^{claim 4} ~~any of claims 2 to 4~~, wherein m is an integer lying in the range $> \text{or} = 3$ and $< \text{or} = 10$.
6. The sensor array according to any previous claim, wherein the spatially variant portion has a log polar sensor element location site density.
7. The sensor array according to any previous claim, wherein the number of sensor element location sites in each second closed ring of the second series is constant.

8. The sensor array according to any previous claim, wherein the density of sensor element location sites in the substantially constant resolution portion merges smoothly into the density of the sensor element location sites in the spatially variant portion.

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9. The sensor array according to claim 8, wherein a first ring of the first series which is adjacent to a second ring of the second series has the same number of sensor element location sites as that second ring.

10 10. The sensor array according to any previous claim, wherein the the sensor element location sites in the $i^{\text{th}} + 1$ second closed ring has the sensor element location sites moved by half the distance between the sensor element location site of that ring compared with the i^{th} second closed ring.

15 11. A substantially constant resolution sensor array comprising a first series of concentric closed rings, each closed ring comprising a monodimensional array of equally spaced sensor element location sites, each location having at least one sensor element, in which the number of sensor element location sites in each closed ring is defined by the i^{th} closed ring having n sensor element location sites and the $i + 1^{\text{th}}$ closed ring having $n + m$ sensor
20 element location sites where n is not equal to 1, and the envelope through the middle of the sensor element location sites of one closed ring is a closed smooth curve.

12. The substantially constant resolution sensor array according to claim 11, wherein the aspect ratio of any sensor element location site with reference to its neighbors is between
25 2.1 and 0.6.

13. The substantially constant resolution sensor array according to claim 11 or 12, wherein m lies in the range ≥ 3 and < 10 .

30 14. The substantially constant resolution sensor array according to ^{claim 13}~~any of the claims 11 to 13~~, further comprising a sensor array with a spatially varying sensor element location site density which surrounds or is surrounded by the substantially constant resolution sensor.

15. The substantially constant resolution sensor array according to claim 14, wherein the spatially variant array has a log polar sensor element location site density.

16. The substantially constant resolution sensor array according to claim 14 or 15, wherein the spatially variant array comprises a second series of concentric closed rings which are concentric with the first series, each closed ring of the second series comprising a monodimensional array of equally spaced sensor element location sites.

17. The substantially constant resolution sensor array according to claim 16, wherein the number of sensor element location sites in each closed ring of the second series is constant.

18. A camera comprising a sensor array in accordance with ~~any of the claim 1 to 17~~ the sensor array including radiation sensitive sensor elements.

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